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ROSS D. SNYDER & ASSOCIATES, INC.
PO BOX 164075
AUSTIN, TX 78716-4075

| EXAMINER | |
|---|---|
| WEIDNER, TIMOTHY J | |
| **ART UNIT** | **PAPER NUMBER** |
| 2609 | |
| **MAIL DATE** | **DELIVERY MODE** |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/495,207 | ROBOTHAM, ROBERT E. | |
| | Examiner | Art Unit | |
| | Timothy Weidner | 2609 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 2, 2006 has been entered.

### *Response to Arguments*

2. Applicant's arguments filed October 2, 2006 have been fully considered but they are not persuasive.

With respect to currently pending claims 1-33, applicant presents no arguments. Applicant's remarks are directed to amended claims 1, 2, 7-10, 12-14, 17, 18, 23-26, and 31-33 which includes every independent claim, and therefore affects every dependent claim. Furthermore, the amendments consist only of broadening the claims, and not limiting them. Referring to claim 1 as an example, the term "cell" is changed to "data," the phrase "cell buffers" is changed to "buffers," the phrase "virtual connection identifier" is changed to "identifier," the phrase "cell stream" is changed to "data stream," and the term "cell" is changed to "unit of data." The other amended claims have identical changes except for the presence of minor errors. Therefore, the rejections applied in this office action are under the same statement and grounds as the rejections in the previous office action.

### *Claim Objections*

3. Claim 9 is objected to because of the following informalities: "a stream" should be "a data stream" for consistent terminology. Appropriate correction is required.

Claim 17 is objected to because of the following informalities: in the function of "queuing the identity" the word "cells" has been removed with nothing sufficient to replace it. Appropriate correction is required.

Claim 24 is objected to because of the following informalities: the word "cell" has been removed with nothing sufficient to replace it. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,148,001 to Soirinsuo et al. in view of U.S. Patent No. 6,026,090 to Benson et al.

Regarding claims 1, 10, 17 and 25, Soirinsuo teaches a method for merging a plurality of virtual connections (e.g., VCC1-VCCn in FIG. 4) to form a merged virtual connection (e.g., 450), comprising: buffering cells of each of the plurality of virtual connections into a corresponding one of a plurality of cell buffers (e.g., see col. 10, lines 58-60), wherein each of the plurality of virtual connections is identified by a virtual connection identifier (e.g., VCI 712 in FIG. 7); queuing the identity of a virtual connection when cells that constitute a complete packet are buffered in a cell buffer (e.g., via switch controller comprising state machine 1130, see col. 10, lines 16-18); obtaining prioritization information for the merged virtual connection (e.g., service classes, see col. 7, lines 37-50; and payload type PT, see col. 9, lines 7-32); and generating a cell stream for the merged virtual connection based on the prioritization information and virtual connection identities, wherein the merged virtual connection is identified by a merged virtual connection identifier (e.g., see VPI/VCI Translation 934 in FIG. 9), wherein each cell in the cell stream includes the merged virtual connection identifier. While Soirinsuo may not specifically disclose queuing the identity (e.g., VCI) in a specific queue configuration, Soirinsuo teaches the step of scheduling virtual connections in accordance with the completion of buffered packets (e.g., see col. 9, lines 15-16) via a switch controller (e.g., see col. 10, lines 16-29). Furthermore, Soirinsuo discloses that those skilled in the art will recognize that other methods of obtaining the state of the received cells may be used without departing from the scope of the invention (col. 10, lines 18-21).

Benson also teaches a method for receiving cells, and further, specifically teaches queuing an identifier in a queue (e.g., in the form of complete pointer 128) when cells that constitute a complete queue are buffered in a corresponding cell buffer (e.g., complete queue 124, see col. 4, line 40 - col. 6, line 50 with reference to FIG. 2). Benson further teaches that it is well known in the art to also identify when cells that constitute a complete packet are buffered (e.g., see col. 2, lines 58-67), when suitable memory is available. Further, regarding claim 25, Benson teaches dequeuing of cells is performed in intervals, where different classes receive priority for different ones of the intervals (e.g., see col. 9, line 33 - col. 10, line 65 wherein dequeuing is in accordance with a particular a rate, and different connections receive a particular predefined priority which corresponds to the rate). The teachings of Benson provide improvements in ATM communication such as reduced memory requirements and lower latency (e.g., see col. 2, lines 66-67). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Benson to the method of Soirinsuo in order to reduce memory requirements and reduce latency in ATM communications.

Regarding claims 2, 14, 18 and 26, Soirinsuo and Benson teaches dequeuing cells from the plurality of buffers to produce the cell stream, wherein dequeuing of the cells is based on the prioritization information (e.g., see col. 9, line 33 - col. 10, line 65).

Regarding claims 3, 11, 13, 19 and 27, Soirinsuo teaches each virtual connection comprises prioritization information which includes class prioritization information (e.g., service classes, see col. 7, lines 37-50; and payload type PT, see col. 9, lines 7-32).

Regarding claims 4, 12, 20 and 28, as discussed above regarding claims 1, 10 and 17, Benson teaches the plurality of queues is a linked list configuration (e.g., see col. 5, lines 5-15 and FIG. 2 regarding pointer 128). Also, as discussed above, the teachings of Benson provide improvements in ATM communication such as reduced memory requirements and lower latency (e.g., see col. 2, lines 66-67). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Benson to the method of Soirinsuo in order to reduce memory requirements and reduce latency in ATM communications.

Regarding claims 5, 21 and 29, Soirinsuo teaches the prioritization information allocates available bandwidth on the merged virtual connection based on class by teaching the prioritization information comprises service classes in accordance with various bit rate type requirements (e.g., CBR, VBR, see col. 7, lines 37-50).

Regarding claims 6, 22 and 30, Soirinsuo teaches prioritization information further comprises referencing a prioritization table (e.g., scheduler supporting priorities, see col. 10, lines 22-42) that stores an accessing sequence (e.g., buffer state list or weighted scheduling) for the plurality of queues.

Regarding claims 7, 23 and 31, Soirinsuo teaches generating the cell stream such that cells corresponding to different packets that are combined to produce the merged virtual connection are not intermingled (e.g., see col. 10, lines 29-35).

Regarding claims 8, 24 and 32, Soirinsuo teaches detecting an end of message indication that indicated a final cell for the complete packet (e.g., see col. 9, lines 7-8).

Regarding claims 9 and 33, as discussed above regarding claim 1, Soirinsuo teaches generating a cell stream by combining the cell stream of a first virtual connection (e.g., VCC1) with a cell stream of at least a second virtual connection (e.g., VCC2), wherein the virtual connection identifier corresponding to the second virtual connection is different than the first virtual connection identifier. While Soirinsuo may not specifically disclose that, e.g., a first virtual connection (e.g., VCC1) comprises a merged virtual connection and that the merged virtual connection is further merged with a second virtual connection, Soirinsuo teaches the method of providing a merged virtual connection (e.g., 450 VCC1-n) comprising a plurality of virtual connections. At the time of the invention it would have been obvious to one of ordinary skill in the art to utilize a first virtual connection (e.g., VCC1) comprising a merged virtual connection such as the merged virtual connection taught by Soirinsuo (e.g., 450 VCC1-n) in order to accommodate additional virtual connections.

Regarding claims 15 and 16, Soirinsuo teaches the virtual connection merging system is included in a portion of a communication switch (e.g., see col. 10, lines 35-42). While Soirinsuo may not specifically disclose the location of the virtual connection merging system is limited to specifically either the ingress portion or egress portion of the communication switch, these claims were rejected in a previous office action by the Examiner taking Official Notice that the limitations recited in these claims are well known in the art; that is, it is well known in the art for a virtual connection merging system to be located in the ingress or egress portion of a communication switch. In Applicant's response to a previous office action, Applicant has requested for proof that

such teachings are well known in the art. In response to this request, the following prior art provides this well known teaching in the art: U.S. Patent No. 5,956,334 to Chu et al., U.S. Patent No. 5,838,681 to Bonomi et al., U.S. Patent No. 5,812,527 to Kline et al., U.S. Patent No. 5,777,984 to Gun et al., and U.S. Patent Nos. 5,689,506, 5,689,505 and 5,689,500 to Chiussi et al. Accordingly, it has been shown that it would be obvious to one of ordinary skill in the art to implement the virtual connection system contained within the switch of Soirinsuo such that it is placed in the egress or ingress portion of the switch.

***Conclusion***

7. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy Weidner whose telephone number is (571) 270-1825. The examiner can normally be reached on Monday - Friday 7:30 AM - 5:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on (571) 272-2194. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJW

CHARLES D. GARBER
SUPERVISORY PATENT EXAMINER